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European spiders, a list of definitions of terms used in descriptions and some general remarks on classification. The arrangement of families adopted by Simon is the following.

1st suborder. Araneæ oculatæ; Attidæ; Lycosidæ; Oxyopidæ.
2nd suborder. Araneæ veræ; Sparassidæ; Thomisidæ; Palpimanidæ; Eresidæ; Epeiridæ; Ulobaridæ; Therididæ; Pholcidæ; Hersilidæ; Urocteidæ; Eryoidæ; Agelenidæ; Dictynidæ; Drassidæ.
3rd suborder. Araneæ graphosæ; Scytodidæ; Dysderidæ;
4th suborder. Araneæ theraphosæ; Filistatidæ; Avicularidæ.

The first suborder is founded on the great development of the head and front legs in the Attidæ, the third is the Senoculinæ of Blackwall, the fourth the Theraphores of Walckenaer, and the second comprises all the other families.

For convenience in identification, tables are given of the most prominent characters of the genera of each family and the species of each genus.

The plates give a figure of one spider from each genus in the Epeiridæ, Ulobaridæ, and Dictynidæ, and a few enlarged figures of feet, palpi and copulatory organs.

The second part containing the Urocteidæ, Agelenidæ, Thomisidæ and Sparassidæ, is to be published next April. The work will be quite useful to students in this country.—J. H. E.

WHEELER'S SURVEY OF THE TERRITORIES.[1]—Judging by the present report, a good deal of geological and biological work has been accomplished in connection with the regular topographical work of the survey. Three parties were in the field, and explored portions of Utah, Arizona, Colorado and New Mexico. Considerable geological work was done, while Dr. J. T. Rothrock and assistant John Wolfe collected nearly 12,000 specimens of plants, representing over 1,100 species. A goodly number of animals were collected, and have been distributed to specialists. The report is accompanied by a number of descriptions of fossil vertebrates from New Mexico by Prof. Cope.

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[1] Annual Report upon the Geographical Explorations and Surveys west of the 100th Meridian in California, Nevada, Utah, Arizona, Colorado, New Mexico, Wyoming and Montana. By G. M. Wheeler, U. S. Engineer. Washington, 1874. 8vo, pp. 130, with a map.

EMBRYOLOGY OF THE PILL-BUGS.—An addition of much value to our knowledge of the mode of growth of crustacea is afforded by a Russian embryologist, Dr. Bobretzky in Siebold and Kölliker's "Zeitschrift." He figures the early stages of the pill-bug, or *Oniscus murarius*, of Europe.

THE ENTOMOSTRACA.—An extended and beautifully illustrated memoir by Prof. A. Weissmann, on the structure of *Leptodora hyalina*, a little European Entomostracan, or water-flea, appears in the last number received of Siebold and Kölliker's "Zeitschrift."

BOTANY.

A NEW MATERIAL FOR PAPER.—Considerable attention has recently been called in England to the capabilities of the *Zizania aquatica* as a material for paper. This grass grows in large quantities in swamps on the Canadian shores of Lakes Ontario and Erie, and is known to the native Indians under the name of "Tuscarora," the grains affording an article of diet which is both highly nutritious and palatable, and furnishing food to enormous flocks of wild swans. The culm grows to the height of eight or ten feet, and is of great strength and tenacity. It is said to possess all the good qualities of the "esparto" from the shores of the Mediterranean, now so largely used for paper making in England, and besides, to contain less silex, to require fewer chemicals for its purification, and to make a paper which takes printers' ink with greater sharpness. The great obstacle to its exportation is the heavy freight in consequence of its great bulk; but there is little doubt that if it could be at least partially prepared on this side the water, it might become an important article of commerce. It is stated that a company has been formed for the purpose of obtaining a concession of the land from the Canadian government. The grass is nearly allied to the rice belonging to the tribe Oryzeæ.—A. W. B.

THE MOVEMENT OF WATER IN PLANTS.—Dr. W. R. McNab of Dublin has performed a fresh series of experiments on the rate of motion of the sap in plants, and the transpiration of water from the leaves. The plants selected were the cherry-laurel (*Prunus lauroceræus*), elm and privet; and the results obtained were as follows: 1. That under favorable circum-